Notes from 7 October 2015 AM discussion on SI indicators

**Human Condition**

Diversity of crops – grams protein per ha – also micronutrients important (Zinc content)

* + Vitamin A, Iron,
  + Grain content on plot

No need to measure stunting for research (would be useful for development project)

* Minimum 3 years and 500-1000 samples for accurate power
* Few agricultural interventions would reduce stunting
* Anemia and Vitamin A status – possible to measure but expensive and requires IRB

Better to measure capacity (knowledge and practices) – awareness of nutrition (look for standard questions)

Quantifying nutrient need for a particular household and match with farming systems.

* Kg protein per person per household – hard to get measures, proteins not usually the most important
* Micronutrients more important – Daily requirements of hh compared to annual production of vegetables
* Use look up tables for quantities in each crop

Diet diversity is gold standard – requires continuous monitoring – baseline 24 hour recall, then needs to be done in each season, Fred – did it another project 4 times per year,

* Intrahousehold – days in the past week by person – how many times consumed from each group
* Changes in diet diversity – will they stem from new production of nutrient rich crops or from increased income coupled with nutrition education;
* Monitoring this could also be used to catch negative effects from intensification on diet diversity
* Qualitative interviews on how project is affecting nutrition may also be simpler for detection
* Consumption diversity NOT just production diversity: Often nutrient rich foods are sold to the market; nutrition education and behavior change needed in this context

Landscape level food system analysis

* Proximity to forest important for nutrition (fruits) – part of the food system,
* Closer to market also has improved nutrition, valley of death in between with only grains
* Lots of tradeoffs due to impacts on natural habitat from agriculture
* Some projects like agro-forestry specifically try to address this
* Add landscape level indicator on landscape supply of diverse foods (non-farm)

Food safety and toxicity

* Aflatoxin risk for many crops; Grinding tef can lead to iron toxicity
* We need to add indicators related to food safety and toxicity that stem from production, processing and storage (metrics include amount of harvest with aflatoxins, pesticide levels, iron toxicity)

**Food Security**

* Farm level self-sufficiency only shows potential food security
  + Post-harvest losses – not needed here except in relation to self-sufficiency estimate
  + Income not easily translated into food security, though it can be used for consumption
* Revise duration of food supply to months of food insecurity
* Measure consumption (meals per day) across multiple seasons (lean and surplus seasons)

**Social aspects**

Equity and distribution of labor - Disaggregation by gender

* List activities – who does what by task – power tasks and control tasks for drudgery estimate
* Who controls which crops, livestock and land?
* Ownership can be difficult but access is more important – decision making about management and control

Identifying which groups are marginalized is a key step

* Livelihood types (pastoralist, agro-pastoralist, landless)
* Gender, age, ethnicity, HIV status

Number of collective action (village natural resource regulation, cooperative marketing, labor sharing)

Number of conflicts

Social capital / social cohesion – number who received support – who do you reach out to for various problems

Visualizing SI indicators October 8th 2015

As a means to determine which technologies perform well under which conditions, and to visualize and assess the impact of these technologies in the five domains of SI, we discussed which tools could be used.

Spider diagrams (radar charts) are a useful visual way of comparing technologies across multiple attributes, including representative indicators of all five domains.

Bi-plots (bar charts comparing two contexts/technologies across multiple attributes) allow for including even more variables

Could threshold values be included? Yes, that may be helpful. It would be easier to see on bi-plots. There is some resistance to thresholds due to the context-specificity and the uncertainty. For whichever visualization method it will be important to easily tell what information pertains to what domain. This could be done through color-coding.

For the proposal it would be useful to present a few examples of these visualizations for interventions carried out in Africa RISING, both in terms of teams sharing examples of evaluating technologies to share to partners for scaling; and for showing how we as SI farming systems researchers are evaluating potential impact of SI technologies as they are adopted.

Another way to visualize all of this information is through a dashboard with multiple graphs, dials and charts. These can be put on the web and be linked to M&E so that they can be regularly updated

Finally, we discussed developing one page infographics for innovations or technologies that can show a map of where it would be suitable, and what would be the impact if the technologies quantitative graphs, and icons with brief qualitative results

Does the communication team have capacity to make these infographics? No, they currently outsource this type of work.